WHAT IS CLAIMED IS:

1. A method of fabricating an optical fiber product, comprising the steps of:

preparing a first optical fiber for transmitting light in a band including a wavelength of 1.38 μm, said first optical fiber having a predetermined mode field diameter; and

expanding the mode field diameter in a predetermined region of said first optical fiber,

wherein the predetermined region is heated by a heating source not using a fuel containing pure hydrogen as a constitutive element, so that an increase of transmission loss at the wavelength of 1.38 μm is 0.1 dB or less.

2. A method according to claim 1, wherein said heating source comprises one selected from a torch for mixedly burning deuterium and oxygen, a heater, and a laser.

3. A method according to claim 1, further comprising the steps of:

preparing a second optical fiber having a mode field diameter larger than that of said first optical fiber; and

fusion-splicing an end face of said first optical fiber to an end face of said second optical fiber,

wherein the predetermined region heated includes

the end face of said first optical fiber, and

wherein the predetermined region is heated before or after the fusion-splicing of said first and second optical fibers.

4. A method of fabricating a Raman amplifier, comprising the steps of:

preparing a Raman-amplification optical fiber constituting part of a transmission line for transmitting light in a band including a wavelength of 1.38 μm, said Raman-amplification optical fiber having a predetermined mode field diameter;

preparing an internal fiber element to be fusion-spliced to said Raman-amplification optical fiber, through which pumping light for Raman amplification propagates, said internal fiber element having a mode field diameter different from that of said Raman-amplification optical fiber; and

heating a predetermined region including at least a fused end face of one with the smaller mode field diameter out of said Raman-amplification optical fiber and said internal fiber element, by means of a heating source not using a fuel containing pure hydrogen as a constitutive element, so that an increase of transmission loss at the wavelength of 1.38 μm is 0.1 dB or less.

5. A method according to claim 4, wherein said

heating source comprises one selected from a torch for mixedly burning deuterium and oxygen, a heater, and a laser.

6. A method according to claim 4, wherein the heating of the predetermined region including the fused end face is carried out before or after a fusion splice is made between said Raman-amplification optical fiber and said internal fiber element.

7. A Raman amplifier, comprising:

a Raman-amplification optical fiber constituting part of a transmission line for transmitting light in a band including a wavelength of 1.38 μm, said Raman-amplification optical fiber having a predetermined mode field diameter; and

an internal fiber element to be fusion-spliced to said Raman-amplification optical fiber, through which pumping light for Raman amplification propagates, said internal fiber element having a mode field diameter different from that of said Raman-amplification optical fiber,

wherein a predetermined region, which includes at least a fused end face of one with the smaller mode field diameter out of said Raman-amplification optical fiber and said internal fiber element, has been heated by a heating source not using a fuel containing pure hydrogen as a constitutive element, so that an increase

of transmission loss at the wavelength of 1.38 μm was 0.1 dB or less.

8. A Raman amplifier according to claim 7, further comprising a pumping light supply for supplying the pumping light for Raman amplification into said inner optical fiber element.

9. A method of fabricating an optical coupler, comprising the steps of:

preparing a first optical fiber and a second optical fiber; and

fusion-splicing a side face of said first optical fiber to a side face of said second optical fiber,

wherein the fusion-splicing is implemented by heating the side faces of said first and second optical fibers by a heating source not using a fuel containing pure hydrogen as a constitutive element, so that an increase of transmission loss at a wavelength of 1.38 μm is 0.1 dB or less.

10. A method according to claim 10, wherein said heating source comprises one selected from a torch for mixedly burning deuterium and oxygen, a heater, and a laser.

11. An optical fiber product, said optical fiber product including an optical fiber which transmits light in a band including a wavelength of 1.38 μm and which has a predetermined mode field diameter,

wherein a predetermined region including an end face of said optical fiber has been heated by a heating source not using a fuel containing pure hydrogen as a constitutive element to expand the mode field diameter of said predetermined region, so that an increase of transmission loss at the wavelength of 1.38 μm was 0.1 dB or less.

12. An optical fiber product, said optical fiber product including an optical fiber which transmits light in a band including a wavelength of 1.38 μm and which has a predetermined mode field diameter,

wherein a predetermined region including an end face of said optical fiber has been heated by a heating source using a fuel containing deuterium and oxygen as a constitutive element to expand the mode field diameter of said predetermined region, so that an increase of transmission loss at the wavelength of 1.38 μm was 0.1 dB or less.

13. An optical fiber product, said optical fiber product including an optical fiber which transmits light in a band including a wavelength of 1.38 μm and which has a predetermined mode field diameter,

wherein a predetermined region including an end face of said optical fiber has been heated by a heating source using a CO_2 laser to expand the mode field diameter of said predetermined region, so that an

increase of transmission loss at the wavelength of 1.38 μm was 0.1 dB or less.

14. An optical fiber product, said optical fiber product including an optical fiber which transmits light in a band including a wavelength of 1.38 μm and which has a predetermined mode field diameter,

wherein a predetermined region including an end face of said optical fiber has been heated by a heating source using an electric heater to expand the mode field diameter of said predetermined region, so that an increase of transmission loss at the wavelength of 1.38 μm was 0.1 dB or less.

15. An optical transmission line, comprising:

a first optical fiber for transmitting light in a band including a wavelength of 1.38 μm, said first optical fiber having a predetermined mode field diameter; and

a second optical fiber fusion-spliced to said first optical fiber and having a mode field diameter smaller than that of said first optical fiber, said second optical fiber having a predetermined region including an end face fusion-spliced to an end face of said first optical fiber,

wherein the predetermined region has been heated by a heating source not using a fuel containing pure hydrogen as a constitutive element, so that an increase

of transmission loss at the wavelength of 1.38 μm was 0.1 dB or less.